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Leland R. Snook  
Director  
State Regulation & Pricing

Tel. 602-250-3730  
Fax 602-250-3003  
e-mail Leland.Snook@aps.com

Mail Station 9708  
PO Box 53999  
Phoenix, Arizona 85072-3999

April 1, 2009

Docket Control  
Arizona Corporation Commission  
1200 West Washington  
Phoenix, Arizona 85007

RE: APS Renewable Energy Standard and Tariff Rules 2008 Annual Compliance Report  
Docket No. E-01345A-07-0468

Attached please find copies of Arizona Public Service Company's (APS) Annual Compliance Report pursuant to Decision No. 69127:

"Beginning April 1, 2007, and every April 1<sup>st</sup> thereafter, each Affected Utility shall file with Docket Control a report that describes its compliance with the requirements of these rules for the previous calendar year. The Affected Utility shall also transmit to the Director of the Utilities Division an electronic copy of this report that is suitable for posting on the Commission's website."

A portion of the report contains competitively confidential information. Competitively confidential information will be provided to Staff under a separate cover letter pursuant to the Protective Agreement in this matter. APS is also providing to the Director of the Utilities Division an electronic copy of this report suitable for posting to the Commission website.

If you have any questions about the attached information, please call Jeff Johnson at 602-250-2661.

Sincerely,

*Leland Snook / SC*

Leland R. Snook

Attachment

CC: Ernest Johnson  
Terri Ford  
Barbara Keene  
Brian Bozzo

Arizona Corporation Commission  
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**ARIZONA PUBLIC SERVICE COMPANY**

**2008 RENEWABLE ENERGY STANDARD  
COMPLIANCE REPORT**

**April 1, 2009**

## TABLE OF CONTENTS

<b>I. INTRODUCTION .....</b>	<b>3</b>
<b>II. 2008 RENEWABLE RESULTS.....</b>	<b>6</b>
A. COMPLIANCE WITH RES ENERGY REQUIREMENTS.....	6
<i>Reconciliation of RES Banking.....</i>	7
<i>Program Contract and Incentive Cost.....</i>	8
B. RENEWABLE BUDGET .....	9
<b>III. APS RES RENEWABLE EFFORTS .....</b>	<b>11</b>
A. RENEWABLE GENERATION EFFORTS.....	11
<i>Generation in Operation.....</i>	11
<i>Generation Under Contract Not Yet in Operation .....</i>	12
<i>Renewable Generation - APS Owned .....</i>	13
<i>Renewable Project Development .....</i>	13
B. DISTRIBUTED RENEWABLE ENERGY .....	13
<i>Renewable Energy Incentive Program .....</i>	15
<i>Distributed Energy RFP .....</i>	16
<i>Advertising and Marketing .....</i>	17
<i>Distributed Generation Financing .....</i>	17
<i>Solar Homes Program .....</i>	18
<i>Distributed Energy – Future Compliance .....</i>	18
C. RES COMMERCIALIZATION AND INTEGRATION EFFORTS .....	19
<i>Distributed Energy Cost/Benefit Study.....</i>	19
<i>Thermal Storage Research.....</i>	19
<b>III. APS NON-RES RENEWABLE EFFORTS .....</b>	<b>19</b>
A. GREEN CHOICE RATE PROGRAM.....	19
B. TOTAL SOLAR RATE PROGRAM.....	20
C. GREEN-E CERTIFICATION OF GREEN CHOICE PROGRAM .....	20
<b>IV. RENEWABLE ENERGY COMPETITIVE PROCUREMENT PROCEDURES .....</b>	<b>20</b>
Attachment 1.....	APS 2008 Implementation Plan Compliance Summary
Attachment 2.....	Distributed Energy Estimated Production
Attachment 3.....	RES Banking Reconciliation
Attachment 4.....	Cost of Distributed Energy Shortfall
Attachment 5.....	Navigant Consulting Independent Auditor Certification

ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

## **I. Introduction**

Pursuant to Arizona Corporation Commission (“Commission”) Renewable Energy Standard (“RES”) Rule R14-2-1812, Arizona Public Service (“APS” or “Company”) is providing its RES Annual Compliance report covering the period from January 1, 2008 through December 31, 2008. In 2008, APS has exceeded the overall renewable energy requirement in the RES rules by about 20 percent, although APS did not meet the distributed energy target.

This report also demonstrates APS’ compliance with the Company’s 2008 RES Implementation Plan titled “APS Implementation Plan 2008 to 2012 for the Renewable Energy Standard” (“2008 IP”). The Company’s Implementation Plan efforts are summarized in Attachment 1.<sup>1</sup>

APS continues to embrace renewable energy, and 2008 marked a milestone year. APS delivered nearly double the amount of renewable energy in 2008 than it did in 2007. This accomplishment was supported in large part by customers’ increasing adoption of distributed energy technologies. In total, participation in APS’ distributed energy incentive program grew by almost 60 percent from 2007. Also, requests for incentive funding received in 2008 and carried forward into 2009 will result in a doubling of the installations from efforts in 2008.

In 2008, APS customers received 609,926 megawatt hours (“MWh”) of energy produced from renewable sources through a combination of procurement methods, including purchase power agreements (“PPA”), APS owned and operated solar projects, and distributed energy sources.

Procurement efforts initiated in 2007 and completed in 2008 added 380 megawatts (“MW”) of new renewable energy capacity to the APS system. Along with 146 MW of current capacity, APS is on target to dramatically exceed the RES targets by 2012. In fact, by 2012 the Company will exceed the RES by 90 percent.<sup>2</sup> Key to this accomplishment is the addition of the Solana Generating Station (“Solana”), a 280 MW concentrating solar power (“CSP”) plant that will be located near Gila Bend, Arizona which is anticipated to begin commercial operation in that year.

APS signed the 30 year agreement for the full output of Solana in January 2008. If in operation today, Solana would be the single largest solar power plant in the world. APS’ efforts related to Solana have helped raise both interest and understanding on the potential for solar power in Arizona. APS has also directly benefited from the education and experience of working directly with the plant developer, and used that knowledge in the development of the Company’s long

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<sup>1</sup> APS’ 2008 RES Implementation Plan was approved in Commission Decision No. 70313, dated April 28, 2008.

<sup>2</sup> APS’ forecast renewable generation production plus distributed energy compliance will exceed the requirement by approximately 90 percent before multipliers are added.

ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

range Resource Plan Report ("Resource Plan") which has been filed with the Commission.<sup>3</sup>

The APS Resource Plan represents APS' plans for meeting customers' load growth through 2025. It presents a vision for a balanced resource portfolio, relying on the increasing role of renewable resources. Through the measures described in the Resource Plan, APS would continue its commitment to exceed the goals of the RES and ultimately (in 2025) deliver over 50 percent more energy than would have been required by the RES.

In 2008, APS supported the extension of the federal Investment Tax Credit ("ITC") solar energy. Its passage in the fall of 2008 extended the credit eight years and removed the \$2,000 cap on the residential credit providing several thousand dollars of benefits to each program participant. While extension of the ITC is an important stimulus to promote solar generation starting in 2009 and beyond, its passage had the consequence of postponing many new residential distributed installations until after 2008. Customers delayed or cancelled installations planned for 2008 to take full advantage of the higher tax benefit available beginning in 2009.

While the installation of both photovoltaic ("PV") and solar water heating installations increased significantly in 2009, meeting the RES distributed energy requirement continues to present a challenge. Customer participation in the Company's distributed energy programs is essential to its success. Substantial progress was made in 2008. However, the challenging national economic downturn and the near term impacts resulting from the ITC extension likely limited customers' ability and interest in installation of distributed energy systems.

To continue to increase interest and success of the renewable energy incentive program, APS has added new program features to drive customer participation. APS continues to increase and align its marketing efforts and is working with specific customer segments to increase program reach. In addition, APS continues to seek other methods that can be used to meet the distributed energy requirement.

Supporting these efforts, APS continues to engage the energy markets to identify new renewable resource opportunities. APS currently has three on-going procurement efforts, each designed to further specific renewable resource opportunities; one for large utility-scale generation, one for small utility-scale generation, and a third for distributed energy resources. APS is hopeful that these and subsequent efforts will continue to add new renewable resources to the Company's generating portfolio.

APS also enhanced its commercialization and integration efforts, including thermal storage research through a grant from the Department of Energy ("DOE") and a study on distributed energy costs and benefits.

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<sup>3</sup> APS' Resource Plan was filed in Docket No. E-01345A-09-0037, on January 29, 2009.

ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

In addition to APS' efforts under the RES requirements, APS also offers its customers renewable pricing plans such as the Green Choice Rate program and the Total Solar Rate. APS also obtained Green-e certification for its Green Choice Rate program in 2008.

ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

## **II. 2008 Renewable Results**

The RES requirement in 2008 was 1.75 percent of total retail sales with 10 percent coming from distributed energy.<sup>4</sup>

### **A. Compliance with RES Energy Requirements**

In 2008, APS purchased or generated 609,926 MWh of renewable energy, or 2.11 percent of total retail sales. This total includes renewable generation APS has under contract, APS-owned solar generation, the energy generated by Renewable Energy Incentive Program ("REIP") participants, and the multipliers APS is entitled to apply toward meeting RES compliance targets.<sup>5</sup> APS' 2008 renewable generation represents nearly double the renewable energy generated in 2007.

The table below details APS' compliance with the 2008 RES requirement. APS exceeded the total RES requirement of 1.75 percent of the Company's total retail sales with 79,312 MWh renewable energy credits ("RECs") available for banking.<sup>6</sup> Despite the Company's best efforts to encourage customer participation in incentive programs, APS fell short of the distributed energy requirement of 50,580 MWh by a total of 33,256 MWh. The economic downturn likely limited customers' ability and interest in installation of distributed energy systems. Additionally, the uncertainty over the continuation of the federal ITC likely delayed commercial installations until its extension in fall of 2008, and the expanded economic benefits that became available for residential customers in 2009, likely slowed interest in distributed energy toward the end of 2008. In addition, several very large commercial installations that were expected in 2008 were not completed until early 2009. APS is providing its 2008 annualized distributed energy production in Attachment 2. The figures in the Table 1 below include the effect of multipliers and of energy sold through the Green Choice program.

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<sup>4</sup> Arizona Administrative Code (AAC) R14-2-1804(B) and R14-2-1805(B).

<sup>5</sup> Pursuant to AAC R14-2-1806, a multiplier of .5 is used in the RES for in-state solar installations prior to December 31, 2005.

<sup>6</sup> Through its renewable contracts, APS has exclusive rights to RECs and the transfer of ownership is reconciled in conjunction with a bill of sale. APS maintains on file REC certificates for all transactions.

ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

**Table 1**  
**RES Compliance**  
**Capacity and Energy Obtained from Eligible Renewable Resources**

	<u>Capacity MW</u>	<u>MWh</u>
<b>RES Compliance Requirement (1.75% of retail sales)<sup>1</sup></b>		<b>505,802</b>
<b>Renewable Generation<sup>2</sup></b>		
Renewable Generation	145.7	587,480
Multiplier <sup>3</sup>		5,122
<b>Renewable Generation Total</b>	<b>145.7</b>	<b>592,602</b>
<b>Distributed Energy<sup>4,5</sup></b>		
Distributed Energy		16,450
Multiplier <sup>3</sup>		874
<b>Distributed Energy Total</b>	<b>8.6</b>	<b>17,324</b>
<b>Total Generation Including Multipliers</b>		<b>609,926</b>
<b>Other Additions/Subtractions</b>		
Green Choice Rate Sales <sup>6</sup>		(24,812)
<b>Bank Deposit/(Withdrawal)</b>		<b>79,312</b>

<sup>1</sup> Based on 2008 retail sales of 28,902,977 MWh.

<sup>2</sup> Actual MWh generation.

<sup>3</sup> RES multiplier for in-state solar installations prior to December 31, 2005.

<sup>4</sup> Annualized energy production capacity. An identification of actual installations is provided as Attachment 2.

<sup>5</sup> Approximately 11,438 MWh Residential, 5,887 MWh Non-Residential.

<sup>6</sup> APS does not count Green Choice sales towards the RES pursuant to Commission Decision No. 70313, Docket No. E-01345A-07-0467

***Reconciliation of RES Banking***

As discussed in APS' Commission approved 2008 IP, APS will use RES eligible banked energy to fill compliance shortfalls from time to time. APS expects these shortfalls may occur as production from generation currently under contract fluctuates and new projects experience construction or operational delays. The renewable generation bank was established using RES eligible energy procured prior to the effective dates of the RES rules.<sup>7</sup> After that date, changes to the bank are only expected to come from withdrawals to meet compliance or deposits from excess generation in any given year. APS will use a first-in, first-out approach to track the bank

<sup>7</sup> The RES rules became effective on August 14, 2007.






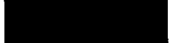
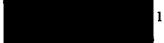
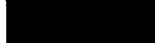



ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

balance. In other words, withdrawals will be made from the oldest vintages first and move to the next oldest year when the oldest year has been exhausted. A table detailing the banking reconciliation is shown on Attachment 3.

***Program Contract and Incentive Cost***

Renewable Generation refers to utility scale renewable projects. In 2008, APS did not construct renewable capacity. Renewable Generation contract costs shown in Table 2 below are the invoice costs and do not include system integration costs.

**Table 2**  
**2008 Renewable Generation Cost**

	Capacity MW	MWh	Contract Cost	RES Cost	Cost per MWh
Renewable Generation:					
Wind	90.0	298,455			
Biomass	14.0	46,346			
Geothermal	35.0	232,436			
Solar (APS-owned)	6.7	15,365	n/a	n/a	n/a
Renewable Generation Total	145.7	592,602	\$39,499,243	\$5,841,360	

<sup>1</sup> Redacted due to the competitively confidential nature of the contract information.

Distributed energy refers to renewable distributed generation sited at customer premises. Distributed energy costs shown in Table 3 are based on the Up-Front Incentives ("UFI") and Production-Based Incentives ("PBI") paid by APS, and do not include the installation costs paid by the participant. The cost per MWh calculations show only the cost paid by APS customers under the RES programs.

ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

**Table 3**  
**2008 Distributed Energy Cost**

	Residential			
	Incentives UFI (\$/MWh) <sup>1,2</sup>		Total Incentive (\$)	Total Installed Costs (\$) <sup>3</sup>
Distributed Energy:				
Solar Electric	\$ 185.59		\$ 6,211,584	\$ 15,436,138
Wind	-		-	-
Biogas	-		-	-
Solar Space Heating	-		-	-
Solar Water Heating	68.58		756,213	2,234,162
Solar HVAC	-		-	-
Total	\$ 156.59		\$ 6,967,797	\$ 17,670,300

	Non-Residential			
	Incentives UFI (\$/MWh) <sup>1,2</sup>	PBI (\$/MWh) <sup>2</sup>	Total Incentive (\$)	Total Installed Costs (\$) <sup>3</sup>
Distributed Energy:				
Solar Electric	\$ 171.12	\$ 249.08	\$ 2,144,444	\$ 5,296,582
Wind	114.62	-	4,500	16,964
Biogas	-	-	-	-
Solar Space Heating	-	-	-	-
Solar Water Heating	-	-	-	-
Solar HVAC	-	-	-	-
Total	\$ 170.94	\$ 249.08	\$ 2,148,944	\$ 5,313,546

Total Residential and Non-Residential			<u>\$ 9,116,741</u>	<u>\$ 22,983,845</u>
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<sup>1</sup> Based on expected lifetime system production.

<sup>2</sup> To best reflect the cost per MWh of distributed energy resources participating in the incentive program, the values provided are based on both paid incentives and reservations received by 12/31/08 and carried forward into 2009.

<sup>3</sup> Customer installed costs are total system costs as reported by incentive recipients and/or installers prior to tax credits and available incentives.

## B. Renewable Budget

Revenues and expenditures for all of 2008 are shown on Table 4. Due to lower than anticipated REIP reservations and some fluctuations in actual renewable generation contract expenses, approximately \$8.3 million collected in 2008 was not spent or committed and was carried forward into the 2009 RES budget.

ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

**Table 4**  
**Renewable Revenues and Expenditures**

**Funds Collected:**

System Benefit Charge (SBC) Revenue <sup>1</sup>	\$ 6,000,000
Environmental Portfolio Surcharge (EPS) Revenue <sup>2</sup>	3,162,359
Renewable Energy Standard (RES) Revenue <sup>2</sup>	22,161,271
Green Choice Revenue	248,119
Miscellaneous Revenue <sup>3</sup>	183,000
2007 Committed Accrual <sup>4</sup>	6,143,836
Funds from 2007 - Uncommitted Carry forward	3,485,633
<b>Total: Collected</b>	<b>\$ 41,384,218</b>

**Funds Spent / Committed:**

Renewable Generation Purchased Power	\$ 5,841,360
APS-owned Solar Maintenance	84,622
Distributed Incentives:	
Paid	\$ 9,116,741
Committed	\$ 12,194,529
Total	21,311,270
<b>Total: Energy and Incentives</b>	<b>27,237,252</b>

Administration & Implementation	3,353,270
Information Services	175,606
Commercialization & Integration	807,598
Marketing & Outreach	1,514,383
<b>Total: Non-Energy/Incentives</b>	<b>5,850,857</b>

<b>Total: Spent and Committed</b>	<b>\$ 33,088,109</b>
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<b>Total: Net Funds Available for Rollover</b>	<b>\$ 8,296,109</b>
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<sup>1</sup> Collected from base rates.

<sup>2</sup> EPS surcharges were collected through June 2008 and RES surcharges were collected from that point forward.

<sup>3</sup> RFP Bid Fees.

<sup>4</sup> Funds collected in 2007 that were committed to cover customer reservations and short-term purchases, but not spent by 12/31/2007.

ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

### III. APS RES Renewable Efforts

Procurement efforts initiated in 2007 and completed in 2008 added 380 MW of new renewable energy capacity to the APS system. Along with 146 MW of current capacity, APS is on target to dramatically exceed the RES by 2012. Key to this accomplishment was the addition of Solana, a 280 MW CSP plant, which is anticipated to begin commercial operation in late 2012. Table 5 below provides a summary of APS' actual renewable generation and capacity and forecast energy through 2012.

**Table 5**  
**2008 Actual and Forecast Renewable Generation**

	Actuals		Implementation Plan Budget MWh	Forecast MWh			
	MW	MWh		2009	2010	2011	2012
<b>Renewable Generation (MWh)</b>							
Wind	90.0	298,455	269,239	399,000	569,000	569,000	569,000
Biomass	14.0	46,346	95,265	93,000	107,000	107,000	107,000
Geothermal <sup>1</sup>	35.0	232,436	78,174	132,000	78,000	78,000	78,000
Solar <sup>2</sup>	6.7	15,365	11,485 <sup>4</sup>	18,000	18,000	18,000	922,000
<b>Renewable Generation Total</b>	<b>145.7</b>	<b>592,602</b>	<b>454,162</b>	<b>642,000</b>	<b>772,000</b>	<b>772,000</b>	<b>1,676,000</b>
<b>RES Requirement - Renewable Generation</b>		<b>455,222<sup>3</sup></b>		<b>498,836</b>	<b>586,215</b>	<b>661,927</b>	<b>728,398</b>

<sup>1</sup> 2008 actual geothermal includes a short-term purchase agreement.

<sup>2</sup> Actuals and forecast includes RES multiplier for in-state solar installations prior to December 31, 2005.

<sup>3</sup> Reflects renewable generation requirement based on actual 2008 retail sales.

<sup>4</sup> Implementation plan budget did not reflect the solar multiple for in-state solar installations prior to December 31, 2005.

#### A. Renewable Generation Efforts

##### *Generation in Operation*

APS has entered into the following PPAs whose output is eligible for inclusion under the RES in 2008.

##### **Aragonne Mesa**

Aragonne Mesa is a 90 MW wind facility located in Guadalupe County, NM. The facility is owned and operated by Babcock and Brown. The facility went into commercial operation in late-December 2006. Total output for 2008 was 298,455 MWh.

##### **CE Turbo**

CE Turbo is a 10 MW geothermal facility located in Imperial County, CA. The facility is owned and operated by Cal Energy. The facility began delivering power to APS in January of 2006 and its output for 2008 was 71,545 MWh. Per the existing contract, APS received renewable energy credits for 44,756 MWh. Per the terms of the contract with Cal Energy, APS will have rights to all of the RECs produced by the plant beginning in 2009.

ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

**Snowflake White Mountain Power**

This facility is a 24 MW biomass facility located near Snowflake, AZ. APS has contracted for 14 MW of the facility's capacity. The facility is owned and operated by Snowflake White Mountain Power and was completed and began operation in June 2008. The facility produced 46,346 MWh in 2008 and annual output is estimated to be 86,000 MWh.

**Geothermal**

APS executed a one year PPA for 25 MW of geothermal energy in late in 2007. The agreement was only for calendar year 2008 and resulted in 187,680 MWh and RECs under the agreement.

***Generation Under Contract Not Yet in Operation***

APS holds long-term PPAs with the following providers whose output is eligible for inclusion under the RES standards. These projects are currently not producing power but are expected to be commercially available within the next several years:

**Solana**

The Solana generating station will be located near Gila Bend, AZ. The facility is a 280 MW generator using solar trough technology with thermal storage and will be owned and operated by Arizona Solar One, LLC. APS expects completion of the facility in 2012, and expected yearly output is 903,000 MWh.

**High Lonesome Wind Ranch**

High Lonesome Wind Ranch ("High Lonesome") is a 100 MW wind generation facility located in Tarrant County, New Mexico. The facility will be owned and operated by High Lonesome Wind Ranch, LLC. APS anticipates the facility will be producing power by mid-2009. Yearly output is expected to be 300,000 MWh.

**Cambrian Energy**

Cambrian Energy is a 3 MW biogas facility located at the 27<sup>th</sup> Avenue landfill in Phoenix. Cambrian Energy Development, LLC will own and operate the facility. The facility was scheduled to be on-line sometime during 2007; however, delays in the development process have severely affected the anticipated completion date of this project. At this time, APS does not expect to take delivery of power under this contract.

**Sexton**

The Sexton facility is a 2.8 MW biogas facility located at the City of Glendale landfill in Glendale, AZ. The facility will be owned and operated by Sexton Energy, LLC. Completion is expected in the second half of 2009 and expected annual output is 21,000 MWh.

ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

***Renewable Generation - APS Owned***

APS owns approximately 6.7 MWdc<sup>8</sup> of solar capacity, which is located throughout Arizona. Approximately 1 MW of the solar capacity is a solar trough facility located at APS' Saguaro Generating Station outside of Tucson. The remainder of the solar capacity is PV and includes both fixed and tracking installations. In 2008, APS-owned solar facilities generated 10,243 MWh, not including multipliers. Multipliers added 5,122 MWh of RECs toward APS' total renewable production in 2008.

***Renewable Project Development***

**Renewable Energy Request for Proposals**

In June 2008, APS issued an RFP for renewable generation resources. As a result of the RFP, 33 developers submitted 56 proposals containing 99 offers. The proposals consisted primarily of solar trough and solar PV technology. Among the non-solar proposals were eight wind, one geothermal, and one renewable natural gas project. Several projects were short-listed for further evaluation. Evaluations and negotiations continued through 2008. The results of this RFP will be announced in 2009.

**Concentrating Solar Power Joint Development Group ("JDG") Initiative**

This initiative enabled CSP providers to formally register their interest and submit a product offering. APS issued an RFP on behalf of the JDG, a consortium of southwestern utilities, on December 6, 2007. Proposals to the RFP were received on March 19, 2008 (15 proposals in total from 10 entities). They included trough, dish engine and solar tower. Two proposals included projects in Nevada, 13 projects were proposed for Arizona.

The JDG interviewed the short-listed developers on May 12, 2008. In the months subsequent to the interviews, the utilities conducted their individual analyses of the projects and discussed various strategies to move a project forward. For a variety of business reasons, in November 2008, the JDG members decided as a group not to pursue a project.

**B. Distributed Renewable Energy**

APS recognizes the importance of distributed energy resources as part of the Commission's comprehensive renewable objectives. While APS was unable to meet the RES distributed energy requirement in 2008 APS continues to implement program enhancements and develop new strategies to promote distributed energy installations. Pursuant to AAC R14-2-1815, this section of APS' 2008 Compliance Report serves as APS notice of noncompliance. APS is also providing its calculation of the cost of meeting the distributed energy shortfall in Attachment 4.

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<sup>8</sup> Solar nameplate capacity is commonly designated in dc (direct current) watts, while utility operations and service are provided in alternating current.

ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

APS is continually looking for ways to increase the penetration of distributed energy within its service territory. APS' current distributed energy strategy and program enhancements are provided below. APS will further address its distributed energy efforts in its upcoming 2010 RES Implementation Plan, which will be filed in July 2009. As discussed above, APS believes that the Company's ability to meet the distributed energy target was impacted by changes in economic conditions as well as unintended consequences from the extension of the ITC in late 2008, where many residential distributed energy installations planned by customers for 2008 were either cancelled or delayed. Table 6 provides a summary of APS' renewable distributed generation efforts.

ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

**Table 6**  
**2008 Distributed Energy**

	Capacity MW	MWh <sup>2</sup>
<b>2008 Distributed Energy Target</b>		50,580 <sup>3</sup>
<b>Residential<sup>1</sup></b>		
Solar Electric	5.0	8,693
Wind	-	-
Biogas	-	-
Solar Space Heating	N/A	-
Solar Water Heating	N/A	2,745
Solar HVAC	N/A	-
<b>Total Residential</b>	<b>5.0</b>	<b>11,438</b>
<b>Non-Residential<sup>1</sup></b>		
<b>UFI</b>		
Solar Electric	1.8	2,098
Wind	0.0	4
Biogas	-	-
Solar Space Heating	N/A	-
Solar Water Heating	N/A	-
Solar HVAC	N/A	243
<b>PBI</b>		
Solar Electric	1.8	3,542
Wind	-	-
Biogas	-	-
Solar Space Heating	N/A	-
Solar Water Heating	N/A	-
Solar HVAC	N/A	-
<b>Total Non-Residential</b>	<b>3.6</b>	<b>5,887</b>
<b>Distributed Energy Total</b>	<b>8.6</b>	<b>17,324</b>

<sup>1</sup> Includes RES multiplier for in-state solar installations prior to December 31, 2005.

<sup>2</sup> Annualized energy production. An identification of actual installations is being provided as Attachment 1.

<sup>3</sup> Half of this value is required from residential installations and the second half from non-residential installations.

***Renewable Energy Incentive Program***

In 2008, APS' Solar Partners Incentive Program was renamed the Renewable Energy Incentive Program to better reflect the program's coverage. In 2008, participation in the REIP grew dramatically. Both PV and solar water heating installations were up significantly from 2007, with increases of 53 percent and 62 percent respectively. APS expects to see continued growth in REIP program participation in future years and the development of non-solar technologies.



ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

In 2008, customers installed 832 distributed energy systems. Among these customers, 829 received UFI and three received PBI. The UFI installations included 421 PV (369 grid-tied, 52 off-grid), one grid-tied wind, and 407 solar hot water heaters. UFI spending in 2008 was \$21 million. PBI Reservations included solar hot water heating, solar cooling, solar heating, and biogas. Actual PBI installations were all PV. Total PBI spending in 2008 was \$100,000 (and includes all installations to date).

In 2008, APS accepted 17 new reservations totaling approximately \$2.2 million in annual commitments for PBIs. Three of the PBI reservations received in 2008 were completed in 2008. The three projects completed in 2008 have an annual commitment of \$789,000 and a lifetime commitment of \$7.9 million. Assuming all project reservations are successfully completed, the total PBI commitment would be \$25.9 million over the life of the PBI agreements.<sup>9</sup> Table 7 below presents additional detail.

**Table 7**  
**PBI Budget**

	<b>PBI Reservations</b>	<b>Annual Commitment \$</b>	<b>Lifetime Commitment (\$)</b>
<b>Pre-2008 Projects</b>			
Completed	1	\$92,963	\$929,625
Extended Reservations	2	\$55,579	\$555,788
<b>Total pre-2008 Projects</b>	3	\$148,542	\$1,485,413
<b>2008 Projects</b>			
Completed	3	\$789,206	\$7,892,058
Reserved	14	\$1,397,280	\$16,485,367
<b>Total 2008 Projects</b>	17	\$2,186,486	\$24,377,425
<b>Total PBI Program</b>	20	\$2,335,028	\$25,862,838
<b>Lifetime PBI Budget<sup>10</sup></b>			\$77,000,000
<b>Remaining PBI Budget</b>			\$51,137,162

***Distributed Energy RFP***

In order to help meet the goals of the distributed energy targets in the RES, APS issued a distributed energy RFP. The RFP was issued in August 2008 in an effort to identify projects to ensure increased installed capacity and to find opportunities to reduce the cost of distributed

<sup>9</sup> Pursuant to Commission Decision No. 70654, APS' 2009 RES Implementation Plan, the total PBI budget through and including 2009 is \$77 million of total contract commitments.

ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

energy resources. Through the RFP, APS is seeking 200,000 MWh per year for projects entering service between 2009 and 2012. In total, 12 developers submitted bids for projects located at 19 different locations. The projects submitted in response to the RFP were primarily solar PV. APS expects to make a short-list decision in early 2009 and to complete negotiations with selected developers in 2009.

***Advertising and Marketing***

Increased marketing of the distributed energy programs was also a focal area for 2008. Over the course of 2008, APS transitioned marketing messaging from one that was designed to increase consumer awareness of the programs towards messaging designed more specifically to drive customer action. In 2008, over 1,500 television and 1,400 radio placement were made for the REIP. In addition, 100,000 individualized direct mail pieces and 1.5 million mail inserts were provided to customers aimed at driving REIP participation. APS also worked with the news media across the state, resulting in extensive positive press coverage about the programs. Importantly, APS also developed and leveraged cooperative marketing efforts with installers interested in marketing the REIP and supported technologies. This cooperative marketing program added potential circulation of about 2.4 million to APS' direct efforts. In total, these marketing efforts resulted in additional opportunities to drive increased customer participation in the REIP.

In 2008, as a result of the breadth of marketing efforts, customer awareness grew from 31 percent to 46 percent among residential customers.<sup>10</sup> APS is also working with television networks to produce educational segments designed to promote distributed solar and move customers from awareness to interest and adoption. Other new activities planned include two residential direct mail campaigns and the launch of media rich web pages that specifically address four different audiences – residential customers, business customers, installers, and builders. During 2009, APS is expecting to increase the number of installers taking advantage of cooperative marketing resources used to help them reach APS customers through their own marketing activities.

***Distributed Generation Financing***

To encourage the installation of residential distributed energy systems, in 2008 APS adopted a program to provide financing options for customers to install residential distributed energy systems. APS partnered with the non-profit Electric & Gas Industries Association (EGIA) providing installment financing for personal renewable distributed energy systems, such as rooftop solar electric, solar water heaters and wind generators. The program was positively received by APS customers and received inquiries from over 1,000 customers within the first month of activity. GE Money, the funding source of GEOSmart program, discontinued their program due

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<sup>10</sup> Based on periodic APS customer surveys.

ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

to economic conditions in October 2009. During its brief tenure, the program facilitated approximately 50 customer installations. EGIA is searching to partner with another financial institution to support the GeoSmart program; APS continues to work with EGIA to this end. Once a replacement is found, the program will be reinstated by APS. APS is hopeful that it will be able to reinstate the program in 2009.

***Solar Homes Program***

As part of its efforts to expand the success of the REIP, APS developed the Solar Community Program. The program was developed in collaboration with homebuilding stakeholders and is planned for launch in 2009. The program rewards homebuilders for their commitment towards developing communities that include solar renewable technologies. APS' goal is to help homebuilders incorporate renewable technologies at the point of their initial design and construction, therefore reducing the cost to the end-use homebuyer and increasing overall customer participation.

***Distributed Energy – Future Compliance***

APS anticipates that compliance with the distributed energy requirement will continue to present a challenge in the near term. However, interest and participation in the program continues to escalate. Nearly 850 reservations accepted in 2008 were carried forward into 2009 for systems that had not yet been installed or commissioned. This is well over three times the number of reservations carried forward from 2007 to 2008. Further, the first two months of 2009 produced over 260 new reservations for REIP incentive funding, more than doubling the reservations received in the first two months of 2008. APS believes this illustrates the growing interest and success of the distributed energy program and the Company is encouraged by the prospective results of this increased interest. APS is working diligently to add new program features to increase interest and customer participation. In addition, APS continues to align its marketing efforts and is working with specific customer segments to increase program reach. APS continues to seek other methods that can be used to meet the distributed energy requirement.

ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

### **C. RES Commercialization and Integration Efforts**

#### ***Distributed Energy Cost/Benefit Study***

In 2008, APS commissioned a study on the benefits of solar distributed technologies to APS' system. The purpose of the study was to develop a base of system specific information and experience from which to build on in order to maximize the benefits of distributed energy resources. The topics that were investigated included the benefit of capacity/energy, delivery system impacts, and transmission system impacts. Navigant Consulting aided APS in development of the scope for the study.

APS released the RFP for full project study on February 6, 2008, and R.W. Beck was contracted to perform the study. The study focused on three technologies: residential and commercial PV, residential solar hot water, and commercial daylighting. R.W. Beck defined the methodologies for establishing the benefits these resources bring to the generation, transmission and distribution systems. Tests were performed at the Prescott Airport site to determine the grid impact of solar. Modeling of distribution losses and peak demand impact was performed by Electric Power Research Institute in conjunction with the study. The Draft Report was published in October 2008. The entire study was completed and filed with the Commission on January 29, 2009.<sup>11</sup>

#### ***Thermal Storage Research***

In September 2008, APS and US Solar were awarded a DOE grant for a five year thermal research and demonstration project at the Saguaro Solar facility. The project is intended to demonstrate two utility scale thermal storage technologies for CSP. The project will test novel technologies and develop methods for reducing overall integration and construction costs. The project is anticipated to begin in 2009.

### **III. APS Non-RES Renewable Efforts**

In addition to the RES-related renewable programs and projects, APS is also engaged in other renewable efforts. Descriptions of these Company programs are provided below.

#### **A. Green Choice Rate Program**

Two new "green power" rates were approved by the Commission in Decision No. 69663 on June 28, 2007. By the end of 2008, 1,556 customers were subscribed to the Green Choice rate. Sales for the year were approximately 24,812 MWh and revenue was slightly over \$248,000.<sup>12</sup>

<sup>11</sup> Distributed Renewable Energy Operating Impacts and Valuation Study. Docket No. E-01345A-05-0816, E-01345A-05-0826, and E-01345A-08-0827.

<sup>12</sup> Green Choice sales are subtracted from total renewable generation and are not counted towards compliance with RES targets. However, funds collected are used for RES programs.

ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

**B. Total Solar Rate Program**

Solar-3 also known as the Total Solar Rate was designed to offer customers for whom the purchase of a solar system is not feasible, the of options purchasing 50 percent or 100 percent of their usage from solar resources.<sup>13</sup> The rate became available for customer subscription on April 28, 2008. Revenue received from the Solar-3 rates reimburses the RES for solar generation output from APS owned facilities.

**C. Green-e Certification of Green Choice Program**

Green-e is a national certification and verification program for renewable energy developed and offered by the Center for Resource Solutions ("CRS"), a national nonprofit organization. This certification indicates that the renewable energy meets environmental and consumer protection standards. Through certification, the APS Green Choice program utilizes the Green-e logo on the APS website and marketing materials. In 2008, approximately 12,000 MWh of eligible renewable energy was sold under the certification program. Green Choice Rate energy sales certification through the CRS program became effective September 26, 2008.

**IV. Renewable Energy Competitive Procurement Procedures**

APS completed its Renewable Energy Competitive Procurement Procedures for Solana and High Lonesome during 2008, in compliance with RES rule R14-2-1812(B)(6). APS engaged Navigant Consulting, Inc. as an independent auditor to review those procedures and on February 8, 2008 and February 13, 2008, Navigant issued its opinion that the procedures APS developed are fair and unbiased. A copy of letters from Navigant confirming that opinion are being provided as Attachment 5.

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<sup>13</sup> Approved by the Commission in Decision No. 69663.

ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

**Attachment 1**

**APS 2008 Implementation Plan Compliance Summary**

**Attachment 1**  
**2008 Implementation Plan**  
**Performance Overview**

Implementation Plan Target	Actions Taken to Execute Implementation Plan Targets
Renewable Generation APS Owned Renewable Generation	<ul style="list-style-type: none"> <li>Operated APS renewable generation resource; achieved a solar capacity factor of approximately 20 percent</li> <li>Monitored and maintained generation resources</li> </ul>
APS Generation Under Contract	<ul style="list-style-type: none"> <li>Manage generation contract to ensure conformance with contract provisions</li> <li>Generation resources delivered 130 percent of anticipated contract generation</li> <li>Successfully completed integration start-up of Snow Flake White Mountain Power, a 24 MW (APS contacted for 14 MW of output) biomass generator</li> </ul>
Addition of Generation Resources	<ul style="list-style-type: none"> <li>Executed contractual agreements for the addition of two utility scale renewable generators <ul style="list-style-type: none"> <li>Solana Generating Station, a 280MW CSP plant scheduled for commercial operation in 2012</li> <li>High Lonesome, a 100 MW wind farm scheduled for commercial operation in the second half of 2009</li> </ul> </li> </ul>
Continue Procurement Efforts	<ul style="list-style-type: none"> <li>Completed contract negotiations for projects resulting from APS's 2007 renewable energy RFP</li> <li>Issued an RFP for additional renewable generation resource in 2008 <ul style="list-style-type: none"> <li>Identified short-list prospects</li> <li>Negotiations are on-going with short-listed prospects</li> </ul> </li> </ul>
Distributed Energy Implementation of the Renewable Energy Incentive Program (REIP)	<ul style="list-style-type: none"> <li>Transformed the Solar Partner Incentive Program in the REIP <ul style="list-style-type: none"> <li>Incorporated support for all RES eligible technologies</li> <li>Facilitated and integrated input from vendors and installers on REIP program functionality</li> <li>Managed a 60 percent increase in customer participation and a much large growth in customer interest through increased APS business integration</li> <li>Increased direct customers support for program participation</li> <li>Trained technology installers and municipal inspectors</li> </ul> </li> <li>Completed and initiated technology improvements to support increased program volume <ul style="list-style-type: none"> <li>Implemented on-line agreement management workflow</li> <li>Developed an interface for PBI production monitoring</li> </ul> </li> </ul>

Marketing the REIP	<ul style="list-style-type: none"> <li>○ Integrated net-metering program into APS standard customer billing</li> <li>○ Completed a request for proposal and selected a vendor to customer facing tool to evaluate rate related benefits for solar energy installation</li> <li>• Created alliances to increase promotion of the REIP <ul style="list-style-type: none"> <li>○ Created an installer cooperative marketing program</li> <li>○ Researched and developed a home builder program, creating the Solar Home Program</li> <li>○ Initiated direct outreach aimed at non-residential customer participation</li> <li>○ Developed and provided a quarterly marketing and program updated to facilitate vendor communication</li> </ul> </li> <li>• Direct APS advertising of the REIP <ul style="list-style-type: none"> <li>○ Placed over 1,500 television advertisement promoting the REIP program</li> <li>○ Placed over 1,400 radio advertisements promoting the REIP program</li> <li>○ Completed 100,000 direct mail pieces to APS customers explaining and promoting the REIP program</li> <li>○ Issued 1.5 million pieces of mass mail advertising</li> <li>○ Participated in public events to promote distributed technologies and the REIP with a total direct customer reach of over 15,000 people</li> <li>○ Completed six print media articles providing in-depth explanation and promotion of distributed energy technologies and the REIP</li> </ul> </li> <li>• Cooperative advertising program supporting installer activities <ul style="list-style-type: none"> <li>○ Partnered with installers to promote the REIP investing over \$80,000 in partnered advertising resulting in a potential circulation of about 2.4 million</li> </ul> </li> </ul>
Commercialization and Integration Completed Studies	<ul style="list-style-type: none"> <li>• Completed and published the Arizona Resource Study</li> <li>• Completed and published APS Wind Integration Study</li> <li>• Completed the Joint Utility Market Study</li> <li>• Completed the efforts of the utility Joint Development Group CSP</li> </ul>
Initiated New C&I Studies	<ul style="list-style-type: none"> <li>• Initiated the Distributed Energy Cost Benefit Study <ul style="list-style-type: none"> <li>○ Utilized a third party consultant to ensure development of a comprehensive project scope</li> <li>○ Contracted with R. W. Beck to complete the year-long study. A draft report was published in October 2008 and the final report will be published in early 2009.</li> </ul> </li> </ul>



ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

**Attachment 2**

**Distributed Energy Production**

	<b>2008 MWh</b>	<b>Annualized MWh</b>
Pre-2008 Installs	9,164,603	9,164,603
2008 Installs	<u>2,743,984</u>	<u>8,159,760</u>
	<u>11,908,587</u>	<u>17,324,363</u>

ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

**Attachment 3**

**RES Banking Reconciliation**

	MWh		
	2006	2007	2008
Renewable Generation:			
<i>RES Eligible Resources:</i>			
Wind	1,142	240,867	298,455
Geothermal	64,376	57,730	232,436
Biomass			46,346
<i>RES &amp; EPS Eligible Resources:</i>			
APS Solar <sup>1</sup>	25,245	20,912	15,365
Renewable Generation Subtotal	90,763	319,509	592,602
Applied to EPS Target:			
APS Solar	(25,245)	(14,714)	n/a
Applied to RES Requirement:			
Wind	n/a	(110,538)	(298,455)
Geothermal	n/a	(23,848)	(232,436)
Biomass	n/a	-	(46,346)
APS Solar <sup>1</sup>	n/a	(6,198)	(15,365)
Deposit/(Withdrawal) for RES Compliance:			
2007 (Post August 14)	(20,586)		79,312
Renewable Generation Bank by Vintage	44,932	164,212	79,312
Renewable Generation Bank Cumulative	44,932	209,144	288,456

<sup>1</sup> Includes RES multiplier for in-state solar installations prior to December 31, 2005.

ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

**Attachment 4**

**Cost of Distributed Energy Shortfall**

		<u>Residential MWh</u>	<u>Non-Residential MWh</u>	<u>Total</u>
<b>2008 DE Requirement</b>		<b>25,290</b>	<b>25,290</b>	<b>50,580</b>
<b>2008 Actual Production</b>				
	UFI	11,438	2,345	13,783
	PBI	0	3,542	3,542
<b>Subtotal 2008 Actual Production</b>		<b>11,438</b>	<b>5,887</b>	<b>17,324</b>
<b>2008 Actual Production Percentages</b>		<b>66%</b>	<b>34%</b>	
<b>2008 Reservations</b>				
	UFI	5,636	1,385	7,021
	PBI	0	14,162	14,162
<b>Subtotal 2008 Reservations<sup>1</sup></b>		<b>5,636</b>	<b>15,548</b>	<b>21,184</b>
<b>Total 2008 Distributed Energy with Reservations</b>		<b>17,074</b>	<b>21,435</b>	<b>38,508</b>
<b>Compliance Shortfall</b>		<b>8,217</b>	<b>3,855</b>	<b>12,072</b>
<b>Distribution of Energy Shortfall (MWh)</b>				
	UFI	8,217	655	8,872
	PBI	0	3,200	3,200
<b>Shortfall Cost (\$/MWh)<sup>2</sup></b>				
	UFI	\$146.54	\$37.72	
	PBI	N/A	\$129.75	
<b>Cost to Make Up Shortfall</b>				
	UFI	\$11,936,962	\$245,112	\$12,182,074
	PBI <sup>3</sup>		\$415,200	\$415,200
<b>Total Cost to Make Up Shortfall</b>		<b>\$11,936,962</b>	<b>\$660,312</b>	<b>\$12,597,274</b>

<sup>1</sup> Assumes execution of all reservations existing at 12/31/08.

<sup>2</sup> Based on 2009 Implementation Plan costs and technology mix.

<sup>3</sup> First year commitment. Total lifetime commitment is approximately \$6.4 million.

ARIZONA PUBLIC SERVICE COMPANY  
RENEWABLE ENERGY STANDARD ANNUAL COMPLIANCE REPORT  
FOR THE CALENDAR YEAR ENDING DECEMBER 31, 2008

**Attachment 5**

**Navigant Consulting Independent Auditor Confirmation**

February 8, 2008

VIA E-MAIL

Mr. Gordon Samuel  
Manager of Resource Acquisition  
Arizona Public Service  
400 North 5th Street, 6th Floor  
Phoenix AZ 85004  
[Gordon.Samueljr@aps.com](mailto:Gordon.Samueljr@aps.com)

Subject: CERTIFICATION OF THE APS 2007 RENEWABLE RFP AND 2007 RENEWABLE BI-LATERAL  
PURCHASE PROCESSES

Dear Mr. Samuel:

This letter serves as a certification by Navigant Consulting Inc. ("NCI") concerning our review of the above mentioned APS 2007 Renewable RFP and 2007 Renewable Bi-Lateral Purchase processes (the "Processes").

The Arizona Public Service Company, Inc. ("APS") has retained Navigant Consulting Inc. ("NCI") to serve as its independent auditor under its Renewable Energy Competitive Procurement Procedure (the "Procedure") dated April 10, 2007 (the "Procedure").<sup>1</sup> The Procedure identifies the policies and procedures that APS will use to procure renewable energy through both request for proposal and bi-lateral purchase approaches. The Procedure also identifies the scope of work for the independent auditor that is required under the RES Rules.

As independent auditor, we monitored and evaluated the solicitation, evaluation and selection process for new renewable resources that APS performed under the 2007 Request for Proposals for Eligible Renewable Energy Resources (the "2007 RFP") including review of the solicitation materials, audit of the evaluations and preparation of a summary report to APS.<sup>2</sup> We also reviewed the solicitation, evaluation and selection process for a new short-term renewable energy purchase

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<sup>1</sup> Arizona Public Service Company, Inc., Renewable Energy Competitive Procurement Procedure, April 10, 2007.

<sup>2</sup> Independent Auditor Report for the 2007 Renewable RFP Process, December 18, 2007, Navigant Consulting Inc.

executed in 2007 for delivery in 2008 (the "2007 Short-Term Purchase") including review of correspondence, terms of the purchase, and preparation of a summary report to APS.<sup>3</sup>

As a result of this work, with respect to the 2007 RFP, we certify that

- the solicitation materials associated with the 2007 RFP were understandable, comprehensive and consistent with the requirements of the Procedure and with other request for proposals for renewable power supply that we have reviewed;
- the terms of the various certification, confidentiality, creditworthiness and other form documents were reasonable and consistent with others we have reviewed;
- the submittal instructions and non-refundable bid fee were reasonable and the description of the evaluation process was clear;
- the presentations made at the pre-bid conference were clear and consistent with the Procedure and the RFP, and the questions and answers made available on the RFP website were also clear and consistent and valuable in further defining the solicitation;
- the evaluation processes were performed on a logical, consistent, fair and reasonable basis, and were consistent with the requirements of the Procedure and with other power supply offer evaluation processes we have performed or observed;
- the threshold and screening processes were performed on a consistent and fair basis, and all necessary and typical costs (integration, transmission, imputed debt) were included;
- the use of production cost modeling to determine avoided cost was thorough and accurate;
- the selection of the shortlist based on lowest cost, qualified offers was reasonable;
- Respondents were given equal opportunity to meet with APS, provide additional information to improve their offers, and to negotiate a standard form term sheet;
- APS endeavored to not provide more favorable term sheet terms to any one Respondent;
- the level of technical due diligence review was comprehensive and thorough;
- the transmission and credit reviews, and subsequent disqualification of some offers was reasonable;
- the price and non-price factors considered in selection of the Finalists was reasonable.

With respect to the 2007 Short-Term Purchase, we certify that

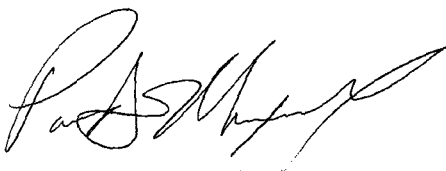
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<sup>3</sup> Independent Auditor Report for the 2007 Renewable Bilateral Purchase, February 8, 2008, Navigant Consulting Inc.

- the offer evaluation process performed by APS was logical, comprehensive and consistent with the requirements of the Procedure and with other power supply offer evaluation processes we have performed or observed;
- the screening and detailed evaluation processes were performed on a consistent and fair basis;
- Respondents were given equal opportunity to meet with APS, provide additional information to improve their offers, and to negotiate a standard form confirmation;
- APS endeavored to not provide more favorable terms to any one Respondent.
- The price and non-price factors considered in selection of the final offer were reasonable.

These certifications represent our conclusions concerning the Processes as of the date of this Report. In preparing this Report, we have relied on documents, correspondence, analyses and information provided to us by APS. While we believe these source documents to be reliable, they have not been independently verified for either accuracy or validity, and no assurances are offered with respect thereto. We make no representations, warranties or opinions concerning the enforceability or legality of the laws, regulations, rules, contracts or other similar documents reviewed as part of these certifications. We express no recommendation, opinion, or advice as to the wisdom, desirability, or prudence of contracting with the Respondents, or to the action any person should take in connection with the offer, issuance, purchase, or sale of securities or contracts related to APS or the Respondents. NCI and its employees are independent contractors providing professional services to APS and are not officers, employees, or agents of APS.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul D. Maxwell", with a stylized, flowing script.

Paul D. Maxwell  
Director

February 13, 2008

VIA E-MAIL

Mr. Gordon Samuel  
Manager of Resource Acquisition  
Arizona Public Service  
400 North 5th Street, 6th Floor  
Phoenix AZ 85004  
[Gordon.SamuelJr@aps.com](mailto:Gordon.SamuelJr@aps.com)

Subject: LETTER CONCERNING CERTIFICATION OF THE APS COMPETITIVE PROCUREMENT PROCEDURE

Dear Mr. Samuel:

This letter is being delivered as of the date set forth below to the Arizona Public Service Company, Inc. ("APS"). This letter confirms that Navigant Consulting Inc. ("NCI") reviewed the Renewable Energy Competitive Procurement Procedure (the "Procedure") of APS dated April 10, 2007<sup>1</sup>, and certified that the Procedure is fair and unbiased.<sup>2</sup>.

Sincerely,



Paul D. Maxwell  
Director

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<sup>1</sup> Arizona Public Service Company, Inc., Renewable Energy Competitive Procurement Procedure, April 10, 2007.

<sup>2</sup> 2007 Renewable Energy Procurement Solicitation Certification FINAL REPORT, Presented to the Arizona Public Service Company, April 10, 2007, Navigant Consulting Inc.